

AMENDMENTS TO THE CLAIMS

1. (canceled) A DNA fragment from the genome of *Amycolatopsis mediterranei* which comprises a DNA region which is involved directly or indirectly in the gene cluster responsible for rifamycin synthesis, including the adjacent DNA regions to the right and left which, by reason of their function in connection with rifamycin biosynthesis, qualify as constituent of this rifamycin gene cluster; and functional fragments, derivatives or constituents thereof.
2. (canceled) A DNA fragment according to claim 1, which is directly or indirectly involved in the gene cluster responsible for rifamycin synthesis.
3. (canceled) A DNA fragment according to claim 1, which comprises sequence portions which code for a polyketide synthase or an enzymatically active domain thereof.
4. (canceled) A DNA fragment according to claim 1, which comprises SEQ ID NO 1 or SEQ ID NO 3 or at least consecutive nucleotides therefrom.
5. (canceled) A DNA fragment according to claim 1, wherein said fragment comprises one or more of the partial nucleotide sequences depicted in SEQ ID NOS 1 and/or 3, or functional fragments thereof, and all other DNA sequences in the vicinity of this sequence which can, by reason of homologies which are present, be regarded as structural or functional equivalents and are therefore able to hybridize with this sequence.
6. (canceled) A DNA fragment according to claim 1, wherein said fragment comprises a nucleotide sequence selected from the group consisting of ORF A, B, C, D, E and F or functional fragments thereof, or encodes one or more of the proteins or polypeptides, or functional derivatives thereof, depicted in SEQ ID NOS 4 to 9.
7. (canceled) A method for identifying, isolating and cloning a DNA fragment according to claim 1.

8. (canceled) A method according to claim 7, which comprises the following steps:

- setting up of a genomic gene bank,
- screening of this gene bank with the assistance of the DNA sequences according to the invention, and
- isolation of the clones identified as positive.

9. (canceled) The use of a DNA fragment according to claim 1 in the production of ansamycins or precursors thereof; including those in which the Wiphatic bridge is connected only at one end to the aromatic nucleus.

10. (canceled) The use of a DNA fragment according to claim 1 in the production of rifamycin, rifamycin analogues or precursors thereof.

11. (canceled) The use of a DNA fragment according to claim 1 for inactivating or modifying genes of ansamycin biosynthesis.

12. (canceled) The use of a DNA fragment according to claim 1 for inactivating or modifying genes of rifamycin biosynthesis, or the biosynthesis of rifamycin analogues.

13. (canceled) The use of a DNA fragment according to claim 1 for constructing mutated actinomycetes strains from which the natural rifamycin or ansamycin biosynthesis gene cluster in the chromosome has been partly or completely deleted.

14. (canceled) The use of DNA fragments according to claim 1 for assembling a library of polyketide synthases.

15. (canceled) The use of the polyketide synthases according to claim 14 for assembling a library of polyketides.

16. (withdrawn from consideration) A polyketide synthase from *Amycolatopsis mediterranei* which is directly or indirectly involved in rifamycin synthesis; and functional constituents or domains thereof.

17. (withdrawn from consideration) The use of the polyketide synthase according to claim 16 for synthesizing ansamycins.

18. (withdrawn from consideration) The use of polyketide synthases according to claim 14 for synthesizing a library of ansamycins.

19. (once amended) A hybrid vector comprising a DNA fragment according to claim 4 24.

20. (once amended) A hybrid vector comprising an expression vector comprising a DNA fragment according to claim 4 24.

21. A host organism comprising a hybrid vector according to claim 19.

22. (canceled) A hybridization probe comprising a DNA fragment according to claim 1.

23. (once amended) ~~The use of the hybridization probe according to claim 22 A method for identifying DNA fragments involved in the biosynthesis of ansamycins of genes that encode ansamycin biosynthesis enzymes, comprising the steps of:~~

(1) obtaining a single-stranded nucleotide having at least 15 consecutive nucleotides from an isolated DNA fragment according to claim 24;

(2) obtaining genomic DNA from an organism that biosynthesizes an ansamycin;

(3) hybridizing the single-stranded nucleotide to the genomic DNA to yield a hybridization product; and

(4) selecting the hybridization product, wherein the selection identifies the genomic DNA as a DNA fragment of a gene that encodes an ansamycin biosynthesis enzyme.

24. (once amended) An isolated DNA fragment from the genome of *Amycolatopsis mediterranei* comprising the DNA region involved in the gene cluster responsible for rifamycin synthesis, and which by reason of its function in connection with rifamycin biosynthesis, qualifies as a constituent of the rifamycin gene cluster, which is SEQ ID NO 1 or wherein said fragment has 90% or greater sequence homology to a region of SEQ ID NO 3 or at least 15 consecutive nucleotides therefrom and wherein said fragment encodes one or more of the proteins or polypeptides having a rifamycin biosynthesis enzymatic function possessed by a rifamycin biosynthesis protein selected from the group consisting of the proteins encoded by ORF A, B, C, D, E and F of the *Amycolatopsis mediterranei* rifamycin synthesis gene cluster.

25. (once amended) An isolated DNA fragment according to claim 24, wherein said fragment comprises a nucleotide sequence selected from the group consisting of ORF A, B, C, D, E, F, and functional fragments thereof, or encodes one or more of the proteins or polypeptides, or functional derivatives thereof, depicted in SEQ ID NOS 4 to 9.

26. (once amended) An isolated DNA fragment according to claim 25 24, wherein said fragment comprises a nucleotide sequence which is ORF A, or functional derivatives thereof, depicted in SEQ ID NO 4.

27. (withdrawn from consideration) The method of inactivating or modifying genes of ansamycin biosynthesis, by inserting a DNA fragment comprising a nucleotide sequence selected from the group consisting of ORF A, B, C, D, E and F or functional fragments thereof, or which encodes one or more of the proteins or polypeptides, or functional derivatives thereof, depicted in SEQ ID NOS 4 to 9, into the genome of an organism capable of the biosynthesis of ansamycin.

28. (withdrawn from consideration) The method according to claim 27 for inactivating or modifying genes of rifamycin biosynthesis, or the biosynthesis of rifamycin analogues, in the genome of an organism capable of the biosynthesis of ansamycin.

29. (withdrawn from consideration) The method according to claim 27 for constructing mutated actinomycetes strains from which the natural rifamycin or ansamycin biosynthesis gene cluster in the chromosome has been partly or completely deleted.

30. (withdrawn from consideration) The method according to claim 27 for assembling a library of polyketide synthases.